

Claims

1. A method of transmitting transparent data requiring a substantially constant transmission delay and a substantially constant bit rate over a connection between a transmitting end and a receiving end, comprising
5 steps of assigning to said connection a bandwidth wider than a bandwidth required by a nominal bit rate of said data,

utilizing a retransmitting transmission protocol over said connection, employing said retransmitting protocol in a protocol layer underlying a transparent layer.

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2. A method according to claim 1, wherein said utilization of the retransmitting protocol comprises steps of

buffering the transmitted data at the transmitting end,

retransmitting the data corrupted during transmission over said

15 connection and requested by the receiving end,

buffering the received data at the receiving end and forwarding the buffered data at a constant bit rate meeting the bit rate and delay requirements of the data,

forwarding from the receiving end the incorrectly received data

20 when the bit rate and delay requirements of the data do not allow to wait for the retransmission of the data, and forwarding the uncorrupted data otherwise.

3. A method according to claim 1 or 2, comprising
buffering the data into a transmitting buffer and a receiving buffer of
equal size,

transmitting new data without waiting for an acknowledgement for
5 previous data if the transmitting buffer fills up to a predetermined level, in order
to avoid the receiving buffer becoming empty.

4. A method according to claim 1 or 2, comprising
transmitting fill data over the connection when the wider bandwidth
10 is not used for transmission and retransmission of the data.

5. A method according to claim 1 or 2, comprising assigning said
wider bandwidth to the connection or using the assigned bandwidth dynami-
cally on demand.

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6. A method according to any one of claims 1 or 2, wherein said
connection is between a subscriber station and a network element over an air
interface in a wireless communications system.

20 7. A method of transmitting transparent data requiring a substan-
tially constant transmission delay and a substantially constant bit rate over a
connection between a transmitting end and a receiving end, comprising

assigning to said connection a bandwidth wider than a bandwidth required by a nominal bit rate of said data,

utilizing a retransmitting transmission protocol over said connection, employing said retransmitting protocol in medium access control (MAC) layer
5 underlying a transparent layer.

8. A communications system comprising

a transmitter and a receiver for transmitting data requiring a substantially constant delay and a substantially constant bit rate over a connection
10 therebetween, said connection having a retransmitting transmission protocol and a bandwidth wider than a bandwidth required by a nominal bit rate of said data, said retransmitting protocol being a retransmitting protocol in a protocol layer underlying a transparent layer.

15 9. A system according to claim 8, wherein said retransmitting protocol is a medium access control (MAC) layer.

10 A system according to claim 8 or 9, comprising
a transmission buffer for the transmitted data in the transmitter (30),
20 the transmitter being arranged to retransmit the data corrupted during transmission over said connection and requested by the receiver,
a receiving buffer in the receiver for forwarding the buffered data at a constant bit rate meeting the bit rate and delay requirements of the data,

the receiver being arranged to forward the corrupted data when the bit rate and delay requirements of the data do not allow to wait for the re-transmission of the data, and to forward the uncorrupted data otherwise.

5 11. A system according to claim 10, comprising
the transmitting buffer and the receiving buffer being of equal size,
the transmitter being arranged to transmit new data without waiting
for an acknowledgement for previous data if the transmitting buffer fills up to a
predetermined level, in order to avoid the receiving buffer becoming empty.

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12. A system according to claim 8 or 9 , wherein the transmitter is
arranged to transmit fill data over the connection when the wider bandwidth is
not used for transmission and retransmission of the data.

15 13. A system according to claim 8 or 9 comprising a dynamic
allocation of said wider bandwidth to the connection on demand.

14. A system according to claim 8 or 9, wherein said retransmitting
protocol is employed in a protocol layer underlying the transparent layer.

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15. A system according to claim 8 or 9, comprising a medium access control (MAC) layer underlying the transparent connection layer, said retransmitting protocol being employed in the MAC layer.

5 16. A system according to claim 8 or 9, wherein said connection is between a subscriber station and a network element over an air interface in a wireless communications system.

10 17. A subscriber terminal in a communications system, said subscriber terminal comprising a transceiver for transmitting and receiving transparent data requiring a substantially constant transmission delay and a substantially constant bit rate over a connection to and from another party, said connection (having a retransmitting transmission protocol and a bandwidth wider than a bandwidth required by a nominal bit rate of said data, said retransmitting protocol is a retransmitting protocol in a protocol layer underlying a transparent layer.

18. A subscriber terminal according to claim 17, wherein a protocol layer underlying a transparent layer. is a medium access control (MAC) layer.

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19. A subscriber terminal according to claim 17 or 18, comprising a transmission buffer for the transmitted data,

the transceiver being arranged to retransmit the data corrupted during transmission over said connection (and requested by the other party, a receiving buffer,

- the transceiver being arranged to forward the corrupted data when
- 5 the bit rate and delay requirements of the data do not allow to wait for re-transmission of the data, and to forward the uncorrupted data otherwise.